The year of 2018 marks the 30th anniversary of the publication of the Chinese Journal of Chemical Physics (CJCP), and the 60th anniversary of the University of Science and Technology of China (USTC).

As a unique way to celebrate these joyful events, the Editorial Board of CJCP decided to organize a special issue in 2018. In late 2017, Dr. Xue-ming Yang, the Editor-in-Chief of CJCP, gave this task of serving as the guest editors of this special issue to the two of us, as we both graduated from the Chemical Physics program at USTC and we both have been around long enough to be on the Editorial Board of CJCP.

Here we present in this special issue with 29 research articles and reviews from the research groups of the alumni of the USTC, who have been affiliated with the Chemical Physics program at USTC, or who have their academic careers in the field of chemical physics.

The Chemical Physics program at USTC is a unique one. The Department of Chemical Physics (DCP) at USTC has been the only chemical physics degree program in the nation. It is the only department that still retains its original name and academic order (the No.3 Department or “San Xi” as it is often called in the USTC jargon) since the founding of USTC. The original Department of Chemical Physics at USTC was created by the legendary Professor Yung-huai Kuo and Professor Xuesen Qian, aiming to train students towards the direction of high-speed chemical reaction dynamics and physical mechanics in order to satisfy the nation’s needs in modern physical sciences. Even though Professor Kuo and Qian were considered neither chemist nor physicist, their unique experiences in the United States during and after the World War II let them realize the crucial roles of the studies on microscopic and dynamic properties of physical substances, and their transformation and reactions in modern chemistry and physics in the developments of modern science and technology. Strange as it seemed, their foresight on the unification of modern science and technology has paid off over the years, as the Department of Chemical Physics at USTC has not only contributed tremendously to the national development of military and high-technology, but also been the only program in China in the past six decades to provide systematic training in modern physical chemistry and chemical physics, particularly in molecular spectroscopy, laser chemistry, molecular reaction dynamics, and theoretical chemistry. Alumni of this department have been one undeniable force in the chemical physics and physical chemistry communities, and quite a few also branched into many other related fields in science and engineering, home and abroad.

CJCP was established in 1988 to satisfy the increasing needs of research in chemical physics and physical chemistry in China. Sponsored by the Chinese Physical Society, CJCP was supported jointly by five academic institutions from the beginning, namely, the Department of Chemical Physics (DCP) at USTC, the Dalian Institute of Chemical Physics, Institute of Chemistry (at Beijing), and Lanzhou Institute of Chemical Physics of the Chinese Academy of Sciences (CAS), and Department of Physics of Tsinghua University, now the first two, with its editorial operation being hosted by DCP at USTC since 1988. Ever since its first issue, CJCP has been the home of the Chinese chemical physics and modern physical chemistry communities.

There are more to celebrate with the history of CJCP and USTC. In the past twenty years, three USTC presidents, Qingshi Zhu (1998–2008), Jianguo Hou (2008–2015) and Xinhe Bao (2017–present), are chemical physicists and have served as long-time editorial board members of CJCP. The contributions of the Chemical Physics program to USTC and to the society in whole have been tremendous and there are more to come. The contributors to this special issue only represent a small portion of the alumni of the Chemical Physics program at USTC who have made this special issue possible. The topics covered in these articles are diverse and highly interdisciplinary, reflecting the breadth of the modern chemical physics and physical chemistry research.

As scientific research bears the future prosperity of the society, with these excellent researches of these alumni, we celebrate not only the past, but also the future.

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